

CLAIMS:

- 5 1. Method of linking an electronic information label (EIL) comprising a display, to an Item in an EIL system comprising the steps:
- registering an EIL ID for the EIL,
 - registering an ITEM ID for the Item to be linked with said EIL,
 - storing the registered EIL ID and the ITEM ID as link data in a link data register in the EIL system,
 - 10 - optionally indicating the link status for the EIL via a system interface,
 - sending link confirmation data from the EIL system to the EIL,
 - indicating, in response to the confirmation data, the link status for the EIL by displaying a link status image on the EIL display,
- 15 **characterized in** that the link status image is at least partly a predefined image stored in an EIL storing means.
- 20 2. Method according to claim 1 **characterized in** that the predefined image is stored as characters in the EIL storing means and that the image to be presented is created in response to the confirmation data by use of a layout script that defines how the characters shall be built up on the display from the character identity.
- 25 3. Method according to claim 1 or 2 **characterized in** that the EIL display is a dot matrix type display.
- 30 4. Method according to any of the claims 1 to 3 **characterized in** that the confirmation data is a LINK ON or a LINK OFF command and the predefined images indicates corresponding link status to the user.
- 5 5. Method according to any of the claims 1 to 4 **characterized in** that the link status image comprises a barcode section intended for displaying a barcode.
- 6 6. Method according to claim 5 **characterized in** that the barcode section displays the barcode of the item to which the EIL is linked.

7. Method according to claim 6 **characterized in** that the confirmation data comprises ITEM ID data for the linked item.
- 5 8. Method according to claim 7 **characterized in** that the ITEM ID data corresponds to the barcode data of the Item.
9. Method according to claim 8 **characterized in** that the barcode data is a one dimensional data string and that the EIL is provided with means for transforming the data string into a graphical barcode that is displayed.
- 10 10. Method according to any of the claims 1 to 9 **characterized in** that the link status image is stored in the EIL storing means whereby it is accessible for confirmation of the link status at a later point in time.
- 15 11. Electronic information label (EIL) comprising a display, the EIL being arranged to indicate the link status for the EIL by displaying a link status image on the EIL display, in response to link confirmation data, **characterized in** that the EIL comprises EIL storing means for storing at least one at least partly predefined image to be displayed as link status image when linking the EIL to an Item.
- 20 12. Electronic information label according to claim 11 **characterized in** that the EIL storing means contains character information and that the EIL comprises layout script means that defines how characters shall be built up on the display from character information.
- 25 13. Electronic information label according to claim 11 or 12 **characterized in** that the EIL display is a dot matrix type display.
- 30 14. Electronic information label according to any of the claims 11 to 13 **characterized in** that the predefined images are arranged to indicate LINK ON or LINK OFF link status to the user.
15. Electronic information label according to any of the claims 11 to 14 **characterized in** that the link status image comprises a barcode section intended for displaying a

barcode.

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16. Electronic information label according to claim 15 **characterized in** that the barcode section displays the barcode of the item to which the EIL is linked.
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17. Electronic information label according to claim 16 **characterized in** that the confirmation data comprises data defining the barcode of the linked item in the form of a one dimensional data string and that the EIL comprises with means for transforming the data string into a graphical barcode that is displayed.
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18. Electronic information label according to any of the claims 11 to 17 **characterized in** that the EIL storing means are arranged to store the link status image as long as said link is active.
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19. Electronic information label comprising a display unit and a control unit **characterized in** that the display unit is detachably attached to the control unit via mating connection means.
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20. Electronic information label according to claim 19 **characterized in** that the control unit is provided with fastening means for attaching it at the "point of purchase".
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21. Electronic information label according to claim 19 or 20 **characterized in** that the control unit comprises display driving means adapted for driving displays of different types.
22. Electronic information label according to claim 19 or 20 **characterized in** that the display is provided with a general display interface and the control unit comprises display driving means capable of driving a display with the general display interface.
23. Electronic information label according any of the claims 19 to 22 **characterized in** that the display type is selected from the list comprising: liquid crystal, electrochromic, electrophoretic, and electronic ink type displays of stiff or flexible type.

24. Electronic information label according any of the claims 19 to 23 **characterized in** that the display unit can be selected from a variety of sizes, all provided with the mating connection means.
- 5 25. Electronic information label according any of the claims 19 to 24 **characterized in** that the display is a double sided display
26. Electronic information label according to claim 25 **characterized in** that the double sided display comprises
- 10 a circuit board with a front surface, a back surface, a front electrode layer, a back electrode layer and at least one intermediate earth electrode layer, the front electrode layer and the back electrode layer each being provided with an electrode pattern defining a display segment pattern,
- 15 at least one display module arranged over and controlled by the display segment pattern on the front surface and the back surface respectively.
27. Electronic information label according to claim 26 **characterized in** that the display modules are of LCD or EPD type.
- 20 28. Electronic information label according to claim 27 **characterized in** that the display modules are microcapsulate EPD modules.
- 25 29. Electronic information label according to any of the claims 25 to 28 **characterized in** that the display is arranged so that it is controlled as one single display that always displays identical information on both sides.
- 30 30. Electronic information label according to any of the claims 25 to 28 **characterized in** that the control unit is arranged to control the information on the two different sides of the display independently.
31. Electronic information label according any of the claims 19 to 30 **characterized in** that the control unit comprises a power source, communication means, display driving

means capable of driving a display and display connection means for connecting a display to the control unit.

- 5 32. Electronic information label (EIL) comprising a display, the EIL being arranged to indicate the link status for the EIL by displaying a link status image on the EIL display, in response to link confirmation data, **characterized in** that the confirmation data comprises an ITEM ID of the Item to which the EIL is linked, and that the link status image is at least partly defined by the ITEM ID.
- 10 33. Electronic information label according to claim 32 **characterized in** that the EIL storing means contains character information and that the EIL comprises layout script means that defines how characters shall be built up on the display from character information.
- 15 34. Electronic information label according to claim 32 or 33 **characterized in** that the EIL display is a dot matrix type display.
- 20 35. Electronic information label according to any of the claims 32 to 34 **characterized in** that the ITEM ID data corresponds to the barcode of the Item.
- 25 36. Electronic information label according to claim 35 **characterized in** that the barcode data is a one dimensional data string and that the EIL is provided with means for transforming the data string into a graphical barcode that is displayed.
- 30 37. Electronic information label (EIL) comprising a display for displaying an image, and a display updating means (15), **characterized in** that the display is an invertible type display and that the display updating means is arranged to invert the displayed image.
38. Electronic information label according to claim 37 **characterized in** that the display updating means inverts the displayed image in response to a received display invert command.
39. Electronic information label according to claim 37 **characterized in** that the display updating means repeatedly inverts the displayed image in response to a received

display flash command.

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40. Electronic information label according to claim 37 **characterized in** that the display is a dot matrix display.
41. Electronic information label according to claim 37 **characterized in** that the display is an invertible segment display comprising a background segment.
- 10 42. Electronic information labeling system **characterized in** that it comprises a plurality of electronic information labels (EIL) according to any of the claims 11 to 41.
43. Method of linking an electronic information label (EIL) comprising a display, to an Item in an EIL system comprising the steps:
- registering an EIL ID for the EIL,
 - 15 - registering an ITEM ID for the Item to be linked with said EIL,
 - storing the registered EIL ID and the ITEM ID as link data in a link data register in the EIL system,
 - optionally indicating the link status for the EIL via a system interface,
 - sending link confirmation data from the EIL system to the EIL,
 - 20 - indicating, in response to the confirmation data, the link status for the EIL by displaying a link status image on the EIL display,
- characterized in** that the confirmation data comprises the ITEM ID, and that the link status image is at least partly defined by the ITEM ID.
- 25 44. Method according to claim 43 **characterized in** that the ITEM ID data corresponds to the barcode of the Item.
45. Method according to claim 44 **characterized in** that the barcode data is a one dimensional data string and that the EIL is provided with means for transforming the data string into a graphical barcode that is displayed.
- 30 46. Double sided display **characterized in** that it comprises
- a circuit board with a front surface, a back surface, a front electrode layer, a back

electrode layer and at least one intermediate earth electrode layer, the front electrode layer and the back electrode layer each being provided with an electrode pattern defining a display segment pattern,

5 at least one display module arranged over and controlled by the display segment pattern on the front surface and the back surface respectively.

47. Double sided display according to claim 46 **characterized in** that the display modules are of LCD or EPD type.

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48. Double sided display according to claim 47 **characterized in** that the display modules are microcapsulate EPD modules.